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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/690,915	10/17/2000	Pengjun Huang	PA000426	4039

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Qualcomm Incorporated  
Patents Department  
5775 Morehouse Drive  
San Diego, CA 92121-1714

EXAMINER
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AZAD, ABUL K

ART UNIT	PAPER NUMBER
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2654

DATE MAILED: 04/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/690,915

Applicant(s)

HUANG, PENGJUN

Examiner

ABUL K. AZAD

Art Unit

2654

– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 October 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-65 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-7, 13-18 and 23-31 is/are allowed.
- 6) ☒ Claim(s) 8-12, 19-22, 32-36 and 39-65 is/are rejected.
- 7) ☒ Claim(s) 37 and 38 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 March 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 4.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

1. Claims 1-63 are pending in this Office Action.

***Information Disclosure Statement***

2. The references cited in the Information Disclosure Statement, Pto-1449, Paper No. 4, have been considered.

***Claim Objections***

3. The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

Misnumbered claims 49-63 been renumbered 49-65.

4. Claim 23 objected to because of the following informalities: claim 23, contains two sentences, a full stop at line 11, a claim supposes to be a single sentence. Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 47 recites the limitation "recovering a group of quantized gains" in independent claim 1, there is no antecedent basis for the limitation recovering a group of quantized gains. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 8, 10-12, 19, 21, 22, 32 and 34-36 are rejected under 35 U.S.C. 102(a) as being anticipated by Nishiguchi et al. (US 6,047,253).

As per claim 8, Nishiguchi teaches, "a method of encoding unvoiced segments of speech", comprising:

"partitioning a residual signal frame into sub-frames, each sub frame having a codebook gain associated therewith" (col. 5, lines 4-45 and col. 9, lines 5-12);

"quantizing the gains to produce indices" (col. 9, lines 5-12);

"scaling a percentage of random noise associated with each sub frame by the indices associated with the sub-frame" (col. 8, lines 46-67, element 126);

"performing a first filtering of the scaled random noise" (col. 8, lines 46-67, element 122);

“comparing the filtered noise with the residual signal” (col. 8, lines 55-63);

“performing a second filtering of the random noise based on the comparison”  
(col. 8, lines 55-63, element 123); and

“generating a second filter selection indicator to identify the second filtering performed” (col. 8, lines 55-67).

As per claims 19 and 32, they are interpreted and thus rejected for the same reasons set forth in the rejection of claim 8.

As per claim 10, Nishiguchi teaches, “wherein the residual signal frame comprises 160 samples per frame sampled at eight kilohertz per second for 20 milliseconds” (col. 5, lines 10-11).

As per claims 11, 21 and 34, Nishiguchi teaches, “wherein the percentage of random noise is twenty-five percent” (col. 17).

As per claims 12, 22, 35 and 47, Nishiguchi teaches, “wherein quantizing the gains to produce indices is performed using multi-stage vector quantization” (col. 5, lines 12-29).

As per claim 36, Nishiguchi teaches, “wherein the first perceptual filter configured to perform a first filtering of the scaled random noise is further configured to filter the scaled random noise using a fixed band pass filter and a fixed shaping filter” (col. 8, lines 46-67).

9. Claims 39-42, 45, 48, 49 and 51-65 are rejected under 35 U.S.C. 102(b) as being anticipated by Iijima et al. (US 5,909,663).

As per claim 39, "a method of decoding unvoiced segments of speech",  
comprising:

"recovering a group of quantized gains using received indices for a plurality of  
sub-frames" (Fig. 5, element 207g);

"generating a random noise signal comprising random numbers for each of the  
plurality of sub-frames" (Fig. 6);

"selecting a pre-determined percentage of the highest-amplitude random  
numbers of the random noise signal for each of the plurality of subframes" (Fig. 4);

"scaling the selected highest-amplitude random numbers by the recovered gains  
for each sub-frame to produce a scaled random noise signal" (Fig. 5, element 222);

"band-pass filtering and shaping the scaled random noise signal" (Fig. 5, element  
223); and

"selecting a second filter based on a received filter selection indicator and further  
shaping the scaled random noise signal with the selected filter"(Fig. 5, element 237).

As per claims 48, 54, 57, 60 and 63, they are interpreted and thus rejected for  
the same reasons set forth in the rejection of claim 39.

As per claims 40, 49, 55 and 61 Iijima teaches, "comprising further filtering the  
scaled random noise" (Fig. 5, element 237).

As per claim 42, Iijima teaches, "wherein the plurality of sub-frames comprise  
partitions of sub-frame gains partitioned into sub-groups" (Fig. 24).

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As per claims 45, 52, 56, 59, 62 and 65, Iijima teaches, "wherein the pre-determined percentage of the highest-amplitude random numbers is twenty-five percent" (Fig. 4).

As per claim 51, Iijima teaches, "wherein the frame of encoded unvoiced speech comprises 160 samples per frame sampled at eight kilohertz per second for 20 milliseconds" (col. 6, lines 43-53).

As per claim 53, Iijima teaches, "wherein the recovered quantized gains are quantized by multi-stage vector quantization" (Fig. 9).

As per claims 58 and 64, Iijima teaches, "comprising a post-filter configured to further filter the scaled random noise" (Fig. 5, element 238u).

### ***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 9, 20 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishiguchi et al. (US 6,047,253).

As per claims 9, 20 and 33, Nishiguchi teaches, "wherein the partitioning a residual signal frame into sub-frames comprises partitioning a residual signal frame into eight sub-frames" (col. 5, lines 13-34, here each frame is 20 msec long and LSP vector is

updated every 2.5 msec). Nishiguchi does not explicitly teach, "wherein the partitioning a residual signal frame into sub-frames comprises partitioning a residual signal frame into ten sub-frames". Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to partition a residual signal frame into ten sub-frame because the choice of the partition a residual signal frame is routine experimentation and optimization in the absence of criticality.

12. Claims 41, 43, 46, 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iijima et al. (US 5,909,663).

As per claims 41, 43, 46, 50 and, Iijima teaches, "wherein the partitioning a residual signal frame into sub-frames comprises partitioning a residual signal frame into eight sub-frames" (col. 6, lines 42-53, here each frame is 20 msec long and LSP vector is updated every 2.5 msec). Nishiguchi does not explicitly teach, "wherein the partitioning a residual signal frame into sub-frames comprises partitioning a residual signal frame into ten sub-frames". Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to partition a residual signal frame into ten sub-frame because the choice of the partition a residual signal frame is routine experimentation and optimization in the absence of criticality.

As per claim 44, Iijima teaches, "wherein the frame of encoded unvoiced speech comprises 160 samples per frame sampled at eight kilohertz per second for 20 milliseconds" (col. 6, lines 43-53).



***Allowable Subject Matter***

13. Claims 1-7, 13-18 and 23-31 are allowed over the prior art of record.
14. Claims 37 and 38 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Contact Information***

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Abul K. Azad** whose telephone number is **(703) 305-3838**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Richemond Dorvil**, can be reached at **(703) 305-9645**.

Any response to this action should be mailed to:

**Commissioner for Patents**

**P.O. Box 1450**

**Alexandria, VA 22313-1450**

Or faxed to:

**(703) 872-9314**

(For informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

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Any inquiry of a general nature or relating to the status of this application should be directed to the Technology Center's Customer Service Office at telephone number (703) 306-0377.

  
Abul K. Azad

April 18, 2004